

165



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,180	10/23/2001	Jerome Tjia	SG 010008	9013

24738 7590 11/05/2004

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EXAMINER

HUYNH, KIM T

ART UNIT PAPER NUMBER

2112

DATE MAILED: 11/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/040,180

Applicant(s)

TJIA, JEROME

Examiner

Kim T. Huynh

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larky et al. (US Patent 6,311,294) in view of Thomson (US Patent 6,073,205)

As per claim 1, Larky discloses a bus system(fig.4, 42) comprising a first (fig.4, 12) and second (fig.4, 14) station coupled via a bus for transferring data and control signals, the bus operating according to a protocol in which the first station repeatedly sends requests for data to the second station, the second station responding to each request by sending a message with a data item or sending a negative acknowledge signal, wherein the second station comprises: (col.2, lines 36-48)

- an interruptable processor (fig.4, 56) for generating data items; (col.2, lines 36-48, wherein simultaneously requesting implies interruptable)
- a bus interface arranged to handle the protocol, sending data items from the buffer in the messages, the bus interface sending an interrupt to the processor in response to selected ones of the requests, when the buffer is empty and no interrupts have yet been generated since the processor has written into the buffer. (col.4, lines 26-67)

Larky discloses all the limitations as above except a first in first out buffer coupled between the processor and the bus, for buffering data items for successive messages in a first in first out order, the processor being programmed to start writing the data items to the buffer in response to an interrupt. However, Thomson discloses queue 46 stores requests to write data to registers in I/O device 14. Queue operates on a first in, first out basis to ensure data will be subsequently written to registers of I/O device in the sequence in which their associated write requests are stored in queue 46. (col.6, lines 40-65)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Thomson's teaching into Larky's system so as to reduce overall traffic over the USB. (col.5, lines 12-20)

As per claims 2,9, Larky discloses wherein the bus system is a USB bys system. (fig.4, 42)

As per claims 3, 5, Larky discloses wherein the bus interface is arranged generate an interrupt signal in response to an acknowledge signal from the first station after sending the message. (col.6,lines 13-58)

As per claims 4 and 8, Chung discloses a bus interface integrated circuit, comprising:

- a connection for a bus; (fgi.2, col.4, lines 26-38)
- a first in first out buffer; (fig.3, 32, col.4,lines 26-38)

- an interrupt output for applying an interrupt to a processor; (col.7, lines 18-29)
- a controller arranged to receive requests for data from the connection, and to respond to the requests by sending a message containing a data item from the buffer if the buffer is not empty, or by sending a negative acknowledge signal to the connection if the buffer is empty and to send an interrupt signal to the interrupt output when the buffer is empty on receiving one of the requests, but only if no interrupt has yet been sent since data has been written into the buffer. (col.4, lines 26-67)

As per claim 6, Chung discloses an integrated circuit arranged to be switchable between a plurality modes of operation, the integrated circuit generating the interrupt signal to the interrupt output when the buffer is empty on receiving one of the requests, but only if no interrupt has yet been sent since data has been written into the buffer in a first one of the modes, the integrated circuit generating an interrupt signal in response to an acknowledge signal from the bus after sending the message in a second one of the modes. (col.4, lines 26-67)

As per claim 7, Chung discloses an integrated circuit arranged to be switchable between a plurality modes of operation, the integrated circuit generating said interrupt signal in response to each request for data when the buffer is empty in a first one of the modes, the integrated circuit generating the interrupt signal to the interrupt output when the buffer is empty on receiving one of the requests, but only if no interrupt has yet been sent since data has been written into the buffer

in a second one of the modes. (col.4, lines 26-67, wherein different type of data implies modes of operation)

Response to Amendment

3. Applicant's amendment filed on 8/9/04 have been fully considered but are moot in view of the new ground(s) of rejection.

a. In response to applicant's argument that Chung does not disclose or teaching of FIFO buffer. However, Thomson discloses queue 46 stores requests to write data to registers in I/O device 14. Queue operates on a first in, first out basis to ensure data will be subsequently written to registers of I/O device in the sequence in which their associated write requests are stored in queue 46. (col.6, lines 40-65)

Thus, the prior art teaches the invention as claimed and the claims do not distinguish over the prior art as applied.

Conclusion


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9.00AM- 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (571)272-3632 or via e-mail addressed to [mark.rinehart@uspto.gov]. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.

Kim Huynh

Oct. 28, 2004


MARK H. RINEHART
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100